

Indian Food Security: From Problem to Solution Through Household Food Security

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Rika Isnarti

Universitas Pertamina

rika.isnarti@universitaspertamina.ac.id

Abstract

This paper assesses food security in India, especially in a rural area where food security condition is far behind. India is one of the countries suffering from food insecurity that leads to nutrition insecurity. To achieve food security is not about how much food being produced or analyzed the availability of food but also about food utility, a condition where everyone can achieve food nutrition with the amount of food being produced. So, food security is also about how people can buy food at a fair price and access to free from malnutrition and obtain good dietary for a healthy life, the utility of food. Therefore, if we want to achieve food security, this is important to provide high nutritional food at an affordable price rather than provide high food production, but people have no access to it. Therefore, this paper assesses India's problem in food security, impact, and solutions, Which on food security at the household level. This research is a qualitative research that utilizes library research to gather and analyses the data. It found that the Indian food security problem mostly occurs in rural areas, which causes malnutrition. Therefore, to achieve food security in India, the government combines government programs with household and women programs such as giving subsidy for small and poor households, giving food to children and subsidizing grain for farmers, and create a home garden.

Keywords: India; Food Security; Rural; Household

Introduction

Food and agricultural organization (FAO, 2008) defined food security as a condition when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. Based on this definition, four food security dimensions have to be achieved: food availability, economic and physical access to food, food utilization, and stability over time.

However, not all parts of the world are food security. In some parts, when people can access food at all times, sometimes they cannot utilize food anytime. In some regions, there is a situation where people lack access to food—this situation called food insecurity. Food insecurity happens when the amount of food is not sufficient to feed the people. As a result, people lack nutrition to grow normally and stay healthy (FAO, 2008). Food insecurity at the household level can be happened because of the bad condition of the availability of food, distribution, and inadequate consumption of food at the household level as insufficient people purchasing power to feed their family at the household level.

Lack of food security can cause many problems. It will lead to hunger, poverty, and increase crime, malnutrition for children that would be easy to die, and decrease health (Venugopal, 2010, P.597). Many children under five age suffer from undernourished because of a

lack of nutrition and hunger (Saxena, 2012, P.8). For an adult, people cannot work properly when they do not have sufficient energy resulted from the food they eat. Consequently, they trap in poverty again and cannot buy nutritious food to sustain their life. Therefore, to eradicate hunger to achieve food security, the situation on the household level should be monitored to reduce the negative impact of food insecurity (Venugopal, 2010, p.599). To show how the importance of this problem to be addressed, it will take India as a case study. India is one of the countries suffering from food insecurity (Upadhyay, 2011, p. 31). Based on data census from FAO from 2012 to 2014 reported that there were 190.7 million undernourished people in India from 1252.1 million total population. There is 15% of India's total population of food and nutrition insecurity.

However, Upadhyay (2011) argues that recently, India is in the second position worldwide in farm output. Agriculture and fishing in India contribute 17% of the total GDP in 2013, which employed almost 51% of the total population (World Bank 2013). This number indicates that India has good agricultural production. On the other hand, India Ranked 67th in the global hunger index in 2010 and 63th in 2013 (Pritchard & Sekher, 2013, p. 216). These two facts are contradictory—the high number of agriculture production but not in the number of people with well nutritious.

Further, in India, hunger and undernourished mostly occur to farmers' families, especially women and children in the rural area where the agricultural sector placed (Gustafson, 2013, p. 399). Farmers cannot afford food because they have to sell their farm products at a low price but then have to buy food to fulfill their family needs at a higher price. Consequently, farmers buy less nutritional food (Upadhyay, 2011, p. 33).

The reason why people cannot obtain proper nutrition for food is that people cannot afford to buy food with proper nutrition to support their daily activity. McMichael & Schneider (2011) believes that the recent food crisis has been associated with rising food prices. It causes rising hunger rates across the world and particularly in the global south, while climate change, economic crisis, a social situation such as war sometimes also support it. Rising food costs can be vulnerable to households as it decreases the household's ability to provide food and nutrition and brings them into poverty. When a family trap in this situation where they cannot buy adequate food for the family, the family will sell its assets to cover their daily needs, which is food (Gustafson, 2013, p. 398) that can cause worse poverty.

The high price of food mostly vulnerable to small scale farmers in rural areas. Although they are food producers and can sell their products at high prices as a food price increase, the cost of production is higher than they can earn from farming. Further, farmers also cannot improve

their income but become worse to cover their needs. Gustafson (2013) argues that around three-fifths of the world's shoddy work in agriculture. Further, he said that the other one-fifth works in rural non-farm employment that is dependent on agriculture, so the long-term impact of high prices on food and nutrition security should not be overlooked.

India is an example of how food prices affect vulnerable households and undernourished levels. Undernutrition in India is higher than many other developing countries due to food prices (Das et al., 2012, p. 577). Further, 48% of the income in India's rural area is spent on buying food (Gahukar, 2009, p.275). Although India's production in food grain increases every year around 3.5% (Varadharajan et al., 2013, p.577), it only gives little impact on food security and nutrition levels of the Indian population. Proven by consumption of food grains among people in rural area such as Madhya Pradesh had decreased (Upadhyay, 2011, p.2). It means that India's production cannot secure its household food security level.

In India, Madhya Pradesh is among the most food-insecure states. Children having stunting (37.66%), wasting (41.12%) and underweight (51.94%), anemia (58.44%), calorie deficit (60.60%) happened in 2012 (Berad & Anwekar, 2013, p. 626) and women's body mass index was less than 18.5 which about 47%. The poverty rate is around 48% in 2014,

which 61% of the population is farmers. This situation causes the state to suffer from food inadequacy. However, Madhya Pradesh is known with paddy, wheat, maize and cereals, soybean, groundnut, and oilseeds production that contribute 23% to national production (UNDP, 2012).

The problem that needs to be addressed here is how to provide an affordable situation for households, whether in terms of price or other sources of food, so they can have good access to food to fulfill their nutrition. Instability in food prices, food production, and household income result in a decline in household access to food and produce famine and undernourished. (World Bank, 2014) Moreover, a high level of undernutrition is measured as a lack of food security (Saxena, 2010,p.9). Therefore, we should make nutrition is included in food security.

Although the Indian government provides a subsidy for its citizens and gives food allowance, the focus of programs only to provide enough cereals for a citizen not address the nutrition for people. As a result, in some areas, the index of childhood mortality is still high. (Gahukar, 2011, p. 270). Further, India has successfully achieved food security at the national level in 2008, with a high amount of food grain production around 227.32 million tonnes. However, this condition does not guarantee that all of the Indian citizens are free from food insecurity. We can see, malnutrition, hunger, and other food insecurity problems

exist in part of Indian states, such as Madhya Pradesh, Uttar Pradesh. Although Madhya Pradesh receives aid from the government and other programs, the level of childhood malnutrition is high, at the period the government runs the Public Distribution System (PDS) program so the household can buy and get cheap food grain.

This research analyses what are some of India's problems in achieving food security, especially in rural areas where most agriculture sectors become the main contribution to people's economy. It assesses how areas in India that become food producers also become source of food insecurity in India. After that, it argues that India has some solutions to counter the food security problem. It starts from government policy that giving subsidy to farmers so they can buy seed and other agriculture equipment at a lower price than before, and it will minimalize cost production. There is also government policy to promote home garden agriculture where every house plant some of the vegetables that they regularly consume. It also educates and employs women at the household level to manage their food and how to distribute it among other family members to minimalize mall nutrition.

In this research, the author uses research with a qualitative descriptive approach. Qualitative research is a particular tradition in social science that fundamentally depends on human observation and relates to these people in giving their terminology. Utilizing library

research, the author uses the study documentation and data collection techniques in the form of journals, scientific articles, working papers, e-books, books, and online news relating to research and issues. After gathering the data, then it shorts by looking at food security in India as general. After that, it eliminates some sources that do not relate to food security at the household level and in a rural area in India. Then, it categorizes which one is the problem and which sources tell about the solutions. These data then give the understanding and meaning by the authors as a crucial part and the essential part of the qualitative method.

Discussion

Status of the Problem

In order to achieve adequate food condition that all of its citizen free from hunger, Indian government and NGOs had done many ways to provide food security, from giving food to children and subsidizing grain for farmers, for example, the Food for Work Programme, Antyodaya Anna Yojana, mid-Day Meal scheme for school children, and other programs (Bezbaruah, 2013.p.3). All of that has been in operation to provide food security to Indian society. Another example is India has The Food Corporation of India through the Public Distribution System (PDS) scheme that obtains, save, and distribute food grains through fair price shop. The objective is to save

farmer production in good harvesting year so the farmer will not face too crash harvesting food in lousy harvest year.

Recently the Indian parliament government had passed The National Food Security act. This program aims to provide food and nutritional security at an affordable price to poor people by subsidizing food grains for 75% of the rural population and 50% urban population in India as a legal entitlement (Bezbaruah, 2013. P.3). This program developed Antyodaya Anna Yojana that provides 25% to 50% of people to subsidize food grains but with a legal basis (Swaminathan & Bhavani 2013, p.381).

This act will be entitled 5kg food grains per month for people and 35kg per month for people in deplorable conditions (Das et al., 2012, p. 580). As a result, every household will get benefit from this to reduce poverty and hunger. The distribution of this program depends on the population of people below line poverty. The many people are below line poverty in an area, the higher they will get national food security bill. If the government cannot provide subsidy for its citizen, the government have to pay compensation that is called food allowance (Bezbaruah, 2013, p.7). The national food security act in the next step will also address children's and women's malnutrition. Further, pregnant and lactating women will be provided with nutritious food to obtain 600 calories each day, and children aged six months to 14 years of age are to

receive free hot meals.

Madhya Pradesh has implemented the National Food Security Act from 1st March 2014 (Varadharajan et al., 2013, p. 330). Varadharajan (2013) also found that the success of government programs such as PDS and giving subsidy to buy staple food has reduced anemia, especially in the Sahariya tribe. Poor people also can buy cheap staple food with a government subsidy to fulfill their daily needs. However, there are failures in these programs. Shika and Khan (2014) state that food subsidies are often poorly targeted. For example, 53% of India's rural poor live in three states Bihar, Uttar Pradesh, and Madhya Pradesh; only 5-10% received subsidized food through PDS and national security act. This amount is too little to achieve food security.

Moreover, many of the programs above only address issues about calories in Indian people. We can see that the government only gives subsidy for food grains, the staple food. The government does not provide other types of food, such as fruit or vegetable, to increase the nutrition of its citizens. In Madhya Pradesh, there is no significant improvement in people's nutrition (Venugopal, 2010, p.595). There are still many children under five that underweight, a high number of infant mortality, and fewer women's body mass index.

Food Insecurity in the Household Level

Food security at the household level is needed to pay attention.

Achieving food security at this level can reach food security in terms of nutrition and compromise good diet quality for every family member (Cordeiro et al., 2012, p.1741). On the other hand, malnutrition can affect people's performance. It can lead to bad work performance as hamper national economic development (Upadhyay, 2011, p.31). Consequently, the lack of economic can perpetuate poverty for people and vulnerable to physical diseases as well. Most of the hamper groups of food insecurity at the household level are children and women. When children lack nutrition, it will be difficult for them to concentrate in school. At the same time, malnutrition women, especially pregnant and breastfeeding mothers, can affect their baby and as themself. Women cannot work as usual while a lack of nutrition. However, they have to do many jobs. Women should work in the home, and some others have to go outside to increase family income and take care of the baby and children.

In Madhya Pradesh case, Kortright & Wakefield (2011) said the lack of utility of food cause many people are in malnutrition has a link to the rise of food price. When food price is rising, it is undermining the poverty reduction efforts, and it gives an impact on food and nutritional due to lack of power purchasing of people. People in Madhya Pradesh usually spend 60-70% of their income to buy food when the price of food is rising, and they cannot adjust it accordingly. (Dev, 2011,p.1) Thus, this situation poses food and nutrition security threats. Poverty is also

one of the causes and effects of food insecurity in terms of nutrition. Poverty can cause people to lack nutrition because they cannot purchase certain items food, and lack of nutrition gives impact to people working and cause less of a salary that affects poverty. Therefore, the task of securing food and nutrition security at the household level is gigantic for India. (World Bank, 2014).

Malnutrition is caused by rising food, so people cannot afford it and has a relation to poverty. It also impacts women and children. Therefore, this is important to solve a problem relating to malnutrition, mainly caused by rising food prices. This problem is a significant source of food insecurity in India, particularly in Madhya Pradesh. If this problem does not solve, it will harm other sectors, such as health and economic, how the Indian economy is growing well if some parts of the state suffer from malnutrition so its people cannot live well. Malnutrition also can trigger other diseases and affect people's health.

Analysis

Identification of Actors Involved

Farmers, particularly small scale farmers, government, women, and non-government organizations, are involved in this problem. Women in a farmer's family are vulnerable from food insecurity and face malnutrition. They also cannot adjust when price rise as most of the farmer families are a net buyer. Net buyer is when people more value

goods they purchase than goods they can produce. (Gustafson, 2013, p. 403).

Saxena (2013) argues that rising food costs, climate change, and natural disaster and lack of investment in agriculture push farmers in rural India such as Uttar Pradesh and Madhya Pradesh to most vulnerable food and nutrition security. Their household is into poverty and weakens their ability to access adequate food. These situations then force them to sell off their assets or forego essentials that worse their condition into a long-lasting poverty trap and challenging to escape because they sold their asset to purchase a high price of food and have nothing to work. That is why undernutrition in India is higher and becomes a massive problem as there are much weaker resulted from powerless to buy food (Abafita & Kim, 2014, p. 21). The government is also involved in this problem. India's government, like other countries' governments, also has responded to this malnutrition and rising food in India. Generally, the government has taken several policies to address these problems. Such as giving subsidies, food allowance, controlling children's nutrition in an urban and rural area, and implemented policies to stabilizing food prices such as controls on private trade, import tariffs, and others to control food price (Dev, 2011, p. 23).

However, the problem of government policies is that the subsidies are not balanced. There is leakage and only address one kind of food

nutrition, food grain, while typically people need other kinds of nutrition such as vitamins. When the government has implemented several policies to control food prices, it only gives small impacts to small farmers. Especially in the rural area that they cannot sell their product based on market price but tend to be illegal to obtain money quickly. (Ali et al., 2012, 279). In addition, the Indian government also tries to develop agriculture and nutrition education, research, and extension system. Several NGOs working in a rural area such as Oxfam have taken essential initiatives towards pro-poor livelihood, agriculture development, nutrition security, and poverty reduction, such as they work in Andhra Pradesh (Gillespie, S., & Kadiyala, 2012 p. 177).

Impact of the Problem

Dev (2011) believes that countries hit by food crises caused by rising prices already have the highest current malnutrition rates. Households have to spend more on cheaper, high-calorie staples and less on foods rich in protein and vitamins, such as meat, fish, dairy, fruit, and vegetables. As a result, they have to reduce the quality of their diet. It will have significant negative consequences for morbidity, mortality, cognitive abilities, and growth (Ramachandran, 2013, p. 379). Women and children in small farmers' households are vulnerable and hamper to impact of malnutrition in food insecurity. As a result, households cannot

purchase food. Women and children are suffering and eat less in the family because they consider it a less critical unit. Children and women do not work as men. Consequently, women consider eating less (Upadhyay, 2011, p. 32).

In 2010, 230 million people in rural areas were undernourished. 40% of children below three years of age are underweight, and 45% are stunted in growth. In addition, anemia has risen to the extent of 79% in children below five years and 56% in young women (Jose & Navaneetham, 2010 Sengupta & Syamala, 2012, p. 453). Furthermore, in Madhya Pradesh, malnutrition is a serious concern. In the same year, 50% of children under age five are categorized as too short for their age, and 35% are too thin for their height that indicates they have been undernourished in a quite long time (Rebecca, 2010, p. 14).

Infant, pregnant, and lactating mothers in Madhya Pradesh also hamper from worse nutrition due to the rise in food prices. This condition is supported by inadequate knowledge amongst mothers regarding nutrition, breastfeeding, and parenting. (Upadhyay, 2011, p. 35) Pregnant and lactating women were not consuming even 50% of the recommended dietary allowances of vitamin A, iron, vitamin C, free folic acid, and calcium (Arlappa, 2010, p. 673). Besides, they do not have the power to buy, supported by their lack of knowledge about vitamin and other nutrition. Consequently, children age 6-35 months, 56% of

lactating mothers are anemic, while infant mortality hovers at 57 per 1000 (Nusser, 2011, p. 180). In addition, Holmes et al. (2010) argue that food insecurity also can impact crime. For example, in 2010, in Madhya Pradesh, a tribal laborer was pushed to commit theft of a sack of wheat from his neighbor. The tribal laborer did that because there was nothing to eat and stole it because of depression.

Alternative Solutions/Policies

In order to achieve food security at the household level to avoid family from malnutrition and hunger, many ways can be done. In the case of India, what the Indian government has done are good ways if, to some extent, we can maintain the policies and focus on nutrition not only to subsidy staple food. People not only need staple food to be secured, but they also need nutritious food with protein and vitamins to make it balance. Something that the Indian government does not cover yet.

First, we need to educate women about how to empower her household. It is imperative because women suffer from malnutrition explained above, and women are closer to children who also suffer negatively from food insecurity. So, teach women and give them an education about food and nutrition would be suitable for food household security. Sidh (2011) also argues that "Mother's education is positively associated with better children education, health, and nutrition outcomes."

In addition to pregnant and lactating mothers, we can implement the program through socialization about maternal education, the important of breastfeeding for babies, and the important of a pregnant mother get a sufficient amount of vitamin, iron, calcium, and other types of nutrition. This program can be done by local community development, NGO, or government program. (Galhena et al. 2013, p. 5). Further, some educational practices can be taught to women to improve food security. The government can design a program about cooking practice. It teaches how to prepare the meal only but full of nutrition with the amount of food available, the importance of hygiene, and knowledge of the nutritive value of foods would benefit women and her household to increase her family member nutrition as herself.

Another program that can be implemented, such as the program about health and nutrition education into the formal school curriculum for girls and adult literacy programs, could also be done to improve women's skills in health and nutrition. Women in a rural area should be able to read food labeling, so they know what nutrition they will obtain if they buy a particular product in the market such as iodized salt, folic acid, and vitamins from certain food products in the market.

However, the main problem with food insecurity is rising food prices, and people cannot purchase it. So, how are they going to buy a particular product in the market? Still, education about nutrition for

women is needed. We can help the problem with rising food prices by creating a home garden. So the household will still get nutritional food they need, although they cannot buy them from the market. Galhena et al. (2013) define "Home gardens as a mixed cropping system that encompasses vegetables, fruits, plantation crops, spices, herbs, ornamental and medicinal plants as well as livestock that can serve as a supplementary source of food and income".

Home gardening has been proven as a reliable source to supplement food and nutritional security at the household level (Upadhyay, 31). To look at the success of home gardening, we can choose Bangladesh as an example. Home gardening had been implemented in Bangladesh since 1990 behind the NGO Helen Keller scheme. (Iannotti, 2009, p. 145) This NGO implements a home gardening and nutritional education project to promote low-cost vegetable gardens and improve nutritional status among women and children. Specifically, this program wants to eliminate vitamin A deficiency and nutritional blindness. As a result, the average household income increased as nutritional intake among families. (Iannotti, 2009, p. 147) this program did in the local community, so the NGO only facilitate the program while community leaders ensure participation household, in this case, women to participate actively.

This program, especially in India, could be helpful if combined

with a government program that giving subsidy to its people but still in terms of staple food not cover other Nutritional food yet. So, when the government can focus firstly on giving aid to its people to obtain food in terms of access, the community can help to empower themselves to provide nutritious food through home gardening. Combining these programs, hopefully, can solve food insecurity.

Comparison of Alternatives

Although home gardening had shown a positive impact on nutrition outcomes, especially in the case of Bangladesh, this program still has many benefits and drawbacks. Home gardening needs to support a nutritional education program, especially for women as the most actor who will involve in home gardening. If women are not given education about the essence of home gardening, and what nutrition value that can obtain for home gardening, the program would be useless. Finally, people will be back in the government program because it would be easier for them to get food from the subsidy, although the amount of food they obtained does not fulfill the nutrition they need. In addition, environmental conditions such as drought, floods, or extreme weather due to climate change can affect home gardening and vulnerable it (Galhena et al.,2013, p.3).

On the other hand, home gardening does not require good and very sufficient knowledge about agriculture. Everyone can do it and do

not require a particular time to plant. At the household level, home gardening can be planted in a small pot that does not need much space like the agricultural field. Home gardening also can help the household to achieve availability, accessibility, and utilization of food. Household is more comfortable to access fresh plant and organic even though they live in an urban or rural area and available anytime they want to use it. In terms of utilization, food items from what has been planted can result in nutritious food that requires family. For example, based on research conducted by Ochse and Terra in 2002 in Kutowanangun Indonesia (Ochse and Terra 2002 in Gelhena et al. 2013), home gardening led 18% of the caloric and 14% of the protein. There, people planted fruit, herb, and vegetable in home gardening. Berbazuah (2013) believes that home gardening can help family income because home gardening can be developed into a small cottage industry. Studies from Nepal, Cambodia, and Papua New Guinea report that the income generated from the sale of home garden fruits, vegetables. It also means that people will be able to generate more than 22% of their cash income through home-gardening activities (Holmes, et al. 2010, p. 179). However, if home gardening is not empowered by women and manage poorly, it can result in women as labor only when income that is getting from home gardening will flow to men without improving nutrition and quality of food at the household level.

Constraints for Achieving the Goals

Combining home gardening with a government program, hopefully, home gardening can cover people's needs on nutrition, especially in India, such as Madhya Pradesh. However, there are still constraints in this method when combining government subsidy with home gardening. First home gardening is natural to attack the insect and destruction of animals, especially in a rural area where an animal can go around in the house yard. Usually, they can eat home gardening plants and left nothing. As a result, the owner cannot get anything (olajide et al., 2010, p. 481).

Moreover, in some areas where climate change is affected and not pleasant environment, home gardening is quite challenging to implement (Berbazuah,2013 p. 8) because nothing would grow there. However, there is a possibility to grow, but only in a small amount. As a result, people still do not get anything to fulfill their nutritional intake.

Combine with government policy in the case of India, and government needs to improve its subsidy policy first. Even though the government has a legal basis for the subsidy, but there is still leakage in some part that its people do not get an appropriate subsidy. So, although this area can be a success in planting home gardening, it will make the problem as the same, because they only can obtain in small amount while the primary function of home gardening is to support

government subsidy. The government also needs to think about giving subsidy in terms of protein, vitamins, and other types of food rather than food grain so that people can cover their basic needs. Further, it would be quite challenging to attempt women's time to teach them about the importance of nutrition, especially among mother and adult who has already though job.

Food security is one element of human security that need to be obtained. To achieve this, governments around the world try to increase the amount of production. However, much of the production is not enough to obtain food security. Food security also means enough nutrition in food that is eaten to produce sufficient energy for life.

However, due to rising food prices, many people, especially in rural areas, cannot obtain to buy good nutrition food, although they are farmers, the food producer. As a result, many people sell their assets to fulfill their basic needs. However, this condition causes people to trap in prolonged poverty and still cannot afford proper nutrition. Consequently, malnutrition, hunger, and undernourished, happen anywhere, such as in the rural area in India.

Malnutrition needs to be addressed in achieving food security, especially at the household level. Although a country can produce much such as in India, other parts of the country do not get benefit from this

production. Proven by, they still lack nutrition. Women and children at the household level are most suffer from malnutrition. Many children under five years of age are underweight and stunted while women suffer from anemia and lose weight. They also cannot feed baby well for breastfeeding mother, and pregnant mother lacks vitamin and mineral that they need in pregnancy period.

Conclusion

To solve food security problem in India, the government tries to implement several policies. In the case of India government gives subsidies for its people to buy staple food, provide fair price market, and give food allowance to buy food if the government cannot provide food grains for them. However, these policies do not solve malnutrition in India. Such as in Madhya Pradesh, a state that receives a high amount of government's subsidy still suffer from malnutrition. This is happening because the government only provides one kind of nutrition that people need. Typically, many nutrition people need to produce better energy so they can have excellent performance at work. Further, if we teach women about food nutrition and home gardening and combine this alternative idea with what the government has done, it might reduce food insecurity. Women are the unit that most suffer from malnutrition and women who also prepare a meal for their family. If women know about nutrition, there is a possibility they can serve nutritious food for

the family. As the price is rising, home gardening can be another solution. Household scale can obtain their other nutrition such as vitamin from fruit and vegetable from a plant in house gardening. House gardening has been practiced in many countries and can help in food security. Home gardening is natural to do and does not require much space. It also can obtain additional income for the family. However, environment, climate change, animal destruction, and lack of women to manage this home gardening can be a challenge for home gardening in obtaining food security.

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Biografi

Rika Isnarti adalah dosen Program Studi Hubungan Internasional Universitas Pertamina. Fokus risetnya adalah cyber politics; cyber diplomacy; non-traditional security issues.